

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:
obtaining a total memory bandwidth available for a time period;
obtaining a plurality of digital video data or digital audio data bandwidth requests for the time period for a plurality of isochronous devices;

apportioning at least a portion of the total memory bandwidth amongst the plurality of bandwidth requests according to a power managed profile and a plurality of data rate requirements associated with the plurality of isochronous devices, wherein the power managed profile causes the bandwidth to be apportioned amongst the requests based at least on interrupt driven asynchronous activity and isochronous data communication, wherein apportioning includes dividing the total memory bandwidth into a plurality of portions of the total memory bandwidth;

determining when to combine data of at least two isochronous data packet transmissions into a combined data packet transmission, based on a data transmission policy which is based on the power managed profile;

[[and]]satisfying at least two of the plurality of bandwidth requests each with at least one of the plurality of portions of the total memory bandwidth by combining data of at least two isochronous data packet transmissions of digital video data or digital audio data into a combined data packet transmission, wherein the combined data packet transmission is a single databurst transmission during a single time of data of the at least two isochronous data packets appended at endpoints of the data, wherein obtaining a plurality of bandwidth requests includes polling a plurality of isochronous applications corresponding to the plurality of isochronous devices;
[[and]]

storing the combined data packet in a memory; and

determining when to transmit the combined data packet transmission based on the data transmission policy.

2. (Currently Amended) The method of claim 1, further comprising:
determining [[a]]the data transmission policy based on the power managed profile and the plurality of bandwidth requests, the data transmission policy to manage delaying transmission of

a first isochronous data transmission and to manage combining data of the first isochronous data packet transmission with data of a second data packet transmission into a combined data packet transmission.

3-4. (Canceled)

5. (Currently Amended) A method comprising:

determining when to delay transmission of a first isochronous data transmission having media data of digital video data or digital audio data to be transmitted to or from a first isochronous device, based on a data transmission policy which is based on the power managed profile;

~~delaying transmission of [[a]]the first isochronous data transmission having media data of digital video data or digital audio data to be transmitted to or from a first isochronous device;~~

determining when to append the first isochronous data packet transmission with a second isochronous data packet transmission having media data of digital video data or digital audio data to be transmitted to or from the first isochronous device into a combined data packet transmission, based on the data transmission policy;

appending the first isochronous data packet transmission with a second isochronous data packet transmission having media data of digital video data or digital audio data to be transmitted to or from the first isochronous device into a combined data packet transmission, wherein the combined data packet transmission is a single databurst transmission during a single time of data of the first isochronous data packet transmission appended at its endpoint to an endpoint of the second isochronous data packet transmission, wherein appending is performed according to a data transmission policy;

using the transmission policy to identify a plurality of transmission time periods during which to transmit a plurality of combined isochronous data packet transmissions, each combined isochronous data packet transmission having media data from at least two isochronous data packet transmissions;

using the transmission policy to select a time to transmit the combined data packet transmission, wherein selecting includes selecting between a transmission time of an opportunistic data transmission and a transmission time of a combined isochronous data packet transmission; and

one of reading media data packet of the combined data packet transmission from a memory and writing media data of the combined data packet transmission to a memory.

6-7. (Cancelled)

8. (Previously Presented) The method of claim 5, wherein the opportunistic data packet transmission comprises one of an asynchronous data transmission and a third isochronous data packet transmission.

9. (Previously Presented) The method of claim 5, wherein the data transmission policy reduces a first frequency of transmission times related to transmitting the first isochronous data packet transmission to a less frequent second frequency of transmission times related to transmitting the combined data packet transmission.

10. (Cancelled)

11. (Previously Presented) The method of claim 5, further comprising:
delaying transmission of the second isochronous data packet transmission.

12. (Previously Presented) The method of claim 5, further comprising:
transmitting the combined data packet transmission prior to expiration of a time delay compliance limit.

13. (Currently Amended) A device comprising:
a bandwidth manager configured to apportion at least a portion of a total memory bandwidth available for a time period, amongst a plurality of bandwidth requests for the time period for a plurality of isochronous devices, according to a power managed profile and a plurality of data rate requirements associated with the plurality of isochronous devices, wherein the power managed profile causes the bandwidth to be apportioned amongst the requests based at least on interrupt driven asynchronous activity and isochronous data communication, wherein apportioning includes dividing the total memory bandwidth into a plurality of portions of the total memory bandwidth and satisfying at least two of the plurality of bandwidth requests each with at least one of the plurality of portions of the total memory bandwidth by combining data of at least two isochronous data packet transmissions into a combined data packet transmission,

wherein the combined data packet transmission is a single databurst transmission during a single time of data of the at least two isochronous data packets appended at endpoints of the data, wherein the plurality of isochronous devices are related to the plurality of isochronous applications run by a processor, and wherein the data rate requirements are associated with a plurality of time delay compliance limits for the plurality of isochronous devices; and the bandwidth manager configured to determine when to combine data of at least two isochronous data packet transmissions into the combined data packet transmission and determine when to transmit the combined data packet transmission, according to a data transmission policy which is based on the power managed profile.

14. (Original) The device of claim 13, wherein the bandwidth manager is coupled to the plurality of isochronous devices to manage data communication between the plurality of isochronous devices and a memory.

15. (Original) The device of claim 14, wherein a duration of the time period depends on a status of a processor.

16. (Cancelled)

17. (Currently Amended) A device comprising:

a data transmission manager configured to delay transmission of a first isochronous data packet transmission having media data to be transmitted to or from a first isochronous device, and to append the first isochronous data packet transmission with a second isochronous data packet transmission having media data to be transmitted to or from the first isochronous device into a combined data packet transmission, wherein the combined data packet transmission is a single databurst transmission during a single time of data of the first isochronous data packet transmission appended at its endpoint to an endpoint of the second isochronous data packet transmission; ~~wherein;~~

the a data transmission manager configured to determine when to delay transmission of the first isochronous data packet transmission, and when to append data of the at least two isochronous data packet transmissions into a combined data packet transmission, appending is performed according to a data transmission policy which is based on a power managed profile;

the a data transmission manager configured to useusing the transmission policy to identify a plurality of transmission time periods during which to transmit a plurality of combined isochronous data packet transmissions, each combined isochronous data packet transmission having media data from at least two isochronous data packet transmissions, wherein identifying the plurality of transmission time periods is performed according to the data transmission policy; and

a data transmission manager configured to useusing the transmission policy to select a time to transmit the combined data packet transmission, wherein selecting includes selecting between a transmission time of an opportunistic data transmission and a transmission time of a combined isochronous data packet transmission, wherein the data transmission policy identifies a plurality of transmission time periods during which to transmit a plurality of combined isochronous data transmissions, and selects a time to transmit the combined data transmission between one of a transmission time of an asynchronous data transmission, a third isochronous data transmission, and a transmission time of one of the plurality of combined isochronous data transmissions, wherein the third isochronous data transmission is to be transmitted to or from a second isochronous device.

18-19. (Cancelled)

20. (Original) The device of claim 17, further comprising:

one of a processor and a data bus coupled to a memory, wherein the combined data transmission is read from or written to the memory via the processor or the data bus.

21. (Original) The device of claim 17, wherein the media data of the first and second isochronous data transmission include one of digital audio data and digital video data.

22. (Currently Amended) An article of manufacture comprising:

a non-transitory machine-readable medium having data therein which when accessed by a processor causes a bandwidth manager to:

obtain a total memory bandwidth available for a time period, obtain a plurality of bandwidth requests for the time period for a plurality of isochronous devices, apportion the at least a portion of a total memory bandwidth amongst the plurality of bandwidth requests according to a power managed profile and a plurality of data rate requirements

associated with the plurality of isochronous devices, and divide the total memory bandwidth into a plurality of portions of the total memory bandwidth and to satisfy at least two of the plurality of bandwidth requests each with at least one of the plurality of portions of the total memory bandwidth by combining data of at least two isochronous data packet transmissions into a combined data packet [[for]] transmission, wherein the combined data packet transmission is a single databurst transmission during a single time of data of the at least two isochronous data packets appended at endpoints of the data, wherein the power managed profile causes the bandwidth to be apportioned amongst the requests based at least on interrupt driven asynchronous activity and isochronous data communication, wherein obtaining a plurality of bandwidth requests includes polling a plurality of isochronous applications corresponding to the plurality of isochronous devices;

determine when to combine the data of the at least two isochronous data packet transmissions into the combined data packet transmission, according to a data transmission policy which is based on the power managed profile; and

determine when to transmit the combined data packet transmission according to the data transmission policy based.

23. (Currently Amended) The article of manufacture of claim 22, further comprising:
data to cause the bandwidth manager to determine [[a]]the data transmission policy based on the power managed profile and the plurality of bandwidth requests, the data transmission policy to delay transmission of a first isochronous data transmission and to combine data of the first isochronous data transmission with data of a second data transmission into a combined data transmission.
24. (Cancelled)
25. (Currently Amended) An article of manufacture comprising:
a non-transitory machine-readable medium having data therein which when accessed by a processor causes a data transmission manager to:
delay transmission of a first isochronous data transmission having media data to be transmitted to or from a first isochronous device, and to append the first isochronous

data transmission with a second isochronous data transmission having media data to be transmitted to or from the first isochronous device into a combined data transmission, wherein the combined data ~~packet-packet transmission~~ is a single databurst transmission during a single time of data of the first isochronous data packet transmission appended at its endpoint to an endpoint of the second isochronous data packet transmission;,

~~determine when to delay and append, wherein appending is performed~~ according to a data transmission policy based on a power managed profile;

~~using~~use the transmission policy to identify a plurality of transmission time periods during which to transmit a plurality of combined isochronous data packet transmissions, each combined isochronous data packet transmission having media data from at least two isochronous data packet transmissions; and ~~using~~use the transmission policy to select a time to transmit the combined data transmission, wherein selecting includes selecting between a transmission time of an opportunistic data transmission and a transmission time of a combined isochronous data transmission, wherein the data transmission policy identifies a plurality of transmission time periods during which to transmit a plurality of combined isochronous data transmissions, and selects a time to transmit the combined data transmission between one of a transmission time of an asynchronous data transmission, a third isochronous data transmission, and a transmission time of one of the plurality of combined isochronous data transmissions, wherein the third isochronous data transmission is to be transmitted to or from a second isochronous device.

26. (Cancelled)

27. (Original) The article of manufacture of claim 26, further comprising:
data to cause the data transmission manager to transmit an opportunistic data transmission prior to expiration of a transmission time period, the opportunistic data transmission having media data from at least two isochronous data transmissions.

28. (Currently Amended) A system comprising:
a bandwidth manager to obtain a total memory bandwidth available from a memory for a time period, obtain a plurality of bandwidth requests for the time period for a plurality of

isochronous devices, and apportion the at least a portion of the total memory bandwidth amongst the plurality of bandwidth requests according to a power managed profile, wherein the power managed profile causes the bandwidth to be apportioned amongst the requests based at least on interrupt driven asynchronous activity and isochronous data communication, wherein apportioning includes dividing the total memory bandwidth into at least four portions of the total memory bandwidth to balance between total power available according to the power managed profile and a plurality of minimum bandwidth requirements of individual entities generating the plurality of bandwidth requests;

a data transmission manager to:

delay transmission of a first isochronous data packet transmission having media data to be transmitted to or from a first of the isochronous devices, and append the first isochronous data packet transmission with a second isochronous data packet transmission having media data to be transmitted to or from the first isochronous device into a combined data packet transmission according to a data transmission policy based on the power managed profile, wherein the combined data transmission is a single databurst transmission during a single time of data of the first isochronous data packet transmission appended at its endpoint to an endpoint of the second isochronous data packet transmission,

determine when to delay and append data according to a data transmission policy,

determine when to transmit the combined data packet transmission according to the data transmission policy; and

a data bus coupled between the memory and the plurality of isochronous devices, wherein the combined data packet transmission is read from or written to the memory via the data bus, wherein apportioning includes dividing the total memory bandwidth into a plurality of portions of the total memory bandwidth and satisfying at least two of the plurality of bandwidth requests each with at least one of the plurality of portions of the total memory bandwidth by combining data of at least two isochronous data packet transmissions into a combined data packet [[for]] transmission.

29. (Original) The system of claim 28, wherein the data transmission policy further: identifies a plurality of transmission time periods during which to transmit a plurality of combined isochronous data transmissions, and selects a time to transmit the combined data

transmission between one of a transmission time of an asynchronous data transmission, a third isochronous data transmission, and a transmission time of one of the plurality of combined isochronous data transmissions.

30. (Original) The system of claim 29, wherein the data transmission policy further: transmits an opportunistic data transmission prior to expiration of a transmission time period, the opportunistic data transmission having media data from at least two isochronous data transmissions.

31. (Previously Presented) The method of claim 1, wherein the power managed profile is based on maximizing the life of a battery of a computer.

32. (Previously Presented) The method of claim 1, wherein the power managed profile is based on power usage policy for a processor, RAM memory, hard drive, processor logic, memory controller, chipset logic and data bus use.

33. (Previously Presented) The method of claim 1, wherein the power managed profile apportions the bandwidth based on a balance between a total power available and a minimum bandwidth requirement of individual entities submitting the requests and including the isochronous devices.

34. (Previously Presented) The method of claim 2 further comprising: the data transmission policy to manage delaying transmission of a third and of a fourth isochronous data packet transmission, and to manage combining data of the third and fourth isochronous data packet transmissions with data of an asynchronous data packet transmission into the combined data packet for transmission.

35. (Previously Presented) The method of claim 5 wherein appending further comprises: appending an asynchronous data packet transmission with the first and second isochronous data packet transmissions to form the combined data packet transmission into the combined data packet for transmission.

36. (Previously Presented) The article of manufacture of claim 23, further comprising:
data to cause the bandwidth manager to delay transmission of a third and of a fourth isochronous data packet transmission, and combine data of the third and fourth isochronous data packet transmissions with data of an asynchronous data packet transmission into the combined data packet for transmission.
37. (Previously Presented) The method of claim 1, wherein apportioning includes dividing the total memory bandwidth into at least four portions of the total memory bandwidth to balance between total power available according to the power managed profile and a plurality of minimum bandwidth requirements of individual entities generating the plurality of bandwidth requests.
38. (Previously Presented) The method of claim 37, further comprising:
after storing, powering-up components required to transmit the combined data packet;
then
transmitting the stored combined data packet.
39. (Previously Presented) The system of claim 28, wherein the combined data transmission is a concatenation of a first frame of data appended to a second frame of data.
40. (New) The method of claim 2, further comprising saving power by delaying transmission of the first isochronous data transmission and reducing the number of isochronous data transmissions to satisfy the data transmission policy.
41. (New) The device of claim 13, wherein the bandwidth manager is configured to save power by delaying transmission of the first isochronous data transmission and reducing the number of isochronous data transmissions to satisfy the data transmission policy.
42. (New) The article of manufacture of claim 25, further comprising:

Data to cause the data transmission manager to save power by delaying transmission of the first isochronous data transmission and reducing the number of isochronous data transmissions to satisfy the data transmission policy.